Centre for Economic Performance

Occasional Paper

No.63
September 2024

Mental health support teams in schools: Evidence and assumptions

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Abstract
In this paper we examine the cost-effectiveness of providing NICE recommended psychological therapy to young people. For each type of mental health problem we show

- the assumptions used to derive the impact of treating one person on the number of "additional years of healthy life" (free of the condition) that that person will experience.
- the cost-saving to the government per "additional year of healthy life".
- the resulting overall cost-savings per person treated.
- the initial cost of the treatment, and
- the resulting WELLBYs.

Keywords: child mental health, schools, anxiety, crime, education.
JEL: D61, H52, I18

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This paper provides background analysis to Value for Money: how to increase wellbeing and reduce misery (D. Frayman, C.Krekel, R. Layard, S. MacLennan and I. Parkes). CEP Special Report 44. (2024).

Published by
Centre for Economic Performance
London School of Economics and Political Science
Houghton Street
London WC2A 2AE

Mental Health Support Teams in Schools: evidence and assumptions

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In this paper we examine the cost-effectiveness of providing NICE recommended psychological therapy to young people. For each type of mental health problem we show

- the assumptions used to derive the impact of treating one person on the number of "additional years of healthy life" (free of the condition) that that person will experience.
- the cost-saving to the government per "additional year of healthy life".
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Anxiety

Assumptions used to estimate additional healthy years.

- Assumed "average" age of treated person: **12**
- Recovery rate: **49.4%** remission from primary anxiety diagnosis (James et al (2020))[2] compared to **17.8%** no treatment controls. Figures are based on ITT, i.e. no retention rate needs to be added to calculation. Outcomes from MHSTs (N=12,500) have shown similar recovery rates for anxiety.[3]
- Natural recovery rate (annual): **9%** Baker et al (2021), assuming this is annual[4]
- Relapse rate (annual)[5]: **10.5%** (Levy et al (2022))
- We only include the relapse and recovery of those who have been treated.
- Recovery and relapse are assumed to be uniform throughout the year, meaning that, on average of those who recover and relapse, 50% of the year is spent in this improved state.

[1] We are extremely grateful for help from Peter Fonagy (National Clinical Advisor on Children's Mental Health), who has agreed this note. Valuable help was also received from Martin Knapp.

[2] Figures for adolescents and children

[3] Specifically, 59% recovery for those with an anxiety disorder (Parker et al, 2024).

[4] Baker et al (2021) report 9% as the natural recovery during treatment. We assume this can be taken as an annual natural recovery rate. We have chosen this as the natural recovery rate since figures from Baker et al focus on adolescents from 12-18 years and considered to be more representative for age 12+.

[5] Follow-up periods of the included studies ranged from 1 to 60 months, with an average duration of approximately 11 months. Study was unable to address the question of whether or not different follow-up durations may have affected reported relapse rates.

- Impact of recovery on wellbeing: **0.7** WELLBYs[6]

Additional healthy years in Year s1, 2 and thereafter are as follows.

$$Recovery\ rate * \left[1 - \frac{Relapse\ rate}{2} - \frac{Natural\ recovery\ rate}{2}\right] + \qquad (Year\ 1)$$

$$Recovery\ rate * (1 - Relapse\ rate - Natural\ recovery\ rate) * \left[1 - \frac{Relapse\ rate}{2} - \frac{Natural\ recovery\ rate}{2}\right] (Year\ 2)$$

For the following years:

$$Recovery\ rate * (1 - Relapse\ rate - Natural\ recovery\ rate)^{(x-1)} * \left[1 - \frac{Relapse\ rate}{2} - \frac{Natural\ recovery\ rate}{2}\right] (Year\ x)$$

Cost savings per additional healthy year

- **Additional mental health-related costs** (to the NHS, social and educational services) are £1,700 a year for children and adolescents with emotional disorders[7].
- **Additional costs of being Not in Employment Education or Training (NEET).** Calculation: 11% additional likelihood of being NEET if have a mental health condition in baseline (Knapp et al, 2016) x average cost per 18-24 year old NEET of £5,815[8] Assume that this applies from age **16**.

We assume treatment starts at the beginning of year 1, meaning that cost savings take place from half-way through the year (in other words, in year 1, only 50% of the annual cost savings are included).

[6] Clark et al (2018) report adult life satisfaction associated with improved mental health of 0.71, which we assume can be applied to young people. The same figure corresponds with data available for children: NHS (2017) reports the absolute difference in WEMWBS score between young people with a mental health disorder and young people without a mental health disorder (53-43.1). Since part of this difference will be due to other factors other than mental health, we apply a 60% reduction, as per evidence used in Layard et al (2007). We then use the conversion factor between WEMWBS and Life Satisfaction (0.13, from Parkes, 2024).

[7] Knapp et al (2016) Uplifted from 2016 to 2023 prices and rounded £1,696. This study analysed data from a nationally representative epidemiological survey, the British Child and Adolescent Mental Health Survey (BCAMHS) and followed young people aged 12–15 at baseline assessment (aged 15–18 by the end of the follow-up period). Cost includes primary care, paediatrics, mental health services, social care, frontline education and special educational resources. 90% of this cost was incurred by the education sector. Only a small proportion is costs to the NHS.

[8] 2023 figures, uprated from Research: Cost Benefit Analysis - Greater Manchester Combined Authority (greatermanchester-ca.gov.uk) This would represent around £600 per person with a mental health disorder at baseline.

Table 1. Additional healthy years of life and additional WELLBYs per person treated for anxiety

Year	1	2	3	4	5	6	7	8	9	10	Total
Age	12	13	14	15	16	17	18	19	20	21	
Additional healthy years of life	0.29	0.23	0.19	0.15	0.12	0.10	0.08	0.07	0.05	0.04	
Additional WELLBYs (discounted)[9]	0.20	0.16	0.13	0.10	0.08	0.07	0.05	0.04	0.03	0.03	**0.9**

Table 2. Estimated fiscal cost savings per person treated for anxiety

Year	1	2	3	4	5	6	7	8	9	10
Age	12	13	14	15	16	17	18	19	20	21
Mental Health related service cost savings	£246	£399	£323	£262	£212	£172	£139	£113	£91	£74
NEET cost savings					£80	£65	£52	£42	£34	£28
Total cost savings (discounted)[10]	**£246**	**£385**	**£302**	**£236**	**£254**	**£199**	**£156**	**£122**	**£95**	**£75**

Over 10 years, the present value of the total cost savings is £2,069 per person treated for anxiety.

Behaviour Disorders

Assumptions used to estimate additional healthy years

- Assumed "average" age of treatment: **8**
- **Conduct disorder: 1.7%** of children aged 5 to 19, **ODD: 2.9%** of children aged 5 to 19[11]. All assumptions below are weighted averages of these two conditions.
- Assuming an evidence-based Parent Management Training is followed[12]

[9] At 1.5%, as per Green Book Guidance

[10] At 3.5%,as per Green Book Guidance

[11] NHS (2017). Figure for conduct disorder is total of conduct disorder confined to family, unsocialised conduct disorder, socialised conduct disorder, other conduct disorder.

[12] Parent Management Training (PMT) is the key approach for treating ODD, based on social learning theory and operant conditioning that can be delivered in MHSTs by EMHPs following Diploma level

- Effectiveness of therapy: **48%** remission from CD/ODD with treatment (Riise et al, 2021)[13] assuming a control remission rate of 13% meaning that **35%** recovery is attributed to treatment.
- Retention rate: **95%** of the participants completed the course (conservative assumption, drawn from Riise et al, 2021). [14]
- Natural recovery rate (annual): 0 for conduct disorder. (An individual participant meta-analysis of 25 studies (Groenman et al., 2022) reported that those who had a CD diagnosis showed evidence of worsening symptoms in the absence of intervention). For ODD, around 60% are likely to see their symptoms resolve within three years (Fonagy, 2024).[15] A simplifying average assumption is taken as **13%** per year.
- Relapse rate (annual): **10%** (assumption)
- Relapse is assumed to be uniform throughout the year, meaning that, on average for those who relapse, 50% of the year is spent in this worsened state.
- Impact of recovery on wellbeing: **0.7** WELLBYs[16]

Cost savings per additional healthy year

- **Mental health-related costs** (to the NHS and educational services) of **£2,242** a year for children and adolescents with behaviour disorders[17].
- **Additional costs of being Not in Employment Education or Training (NEET). 11%** additional likelihood of being NEET if have a mental health condition in baseline (Knapp et al, (2016)) x average cost per 18-24 year old NEET of **£5,815.**[18] Assume that this applies from age **16**.
- **Additional costs to the judicial system**: Without early intervention, CD can continue to impact life into adolescence, with around 50% of those affected turning to substance abuse and criminal activity (Erskine et al., 2016). We use figures from Scott et al (2001) of the subsequent costs of criminality for people aged 10 who have (a) conduct disorder (b) conduct problems and (c) no such

training. It uses positive reinforcement to encourage good behaviour and reduce undesirable ones, focusing on how caregivers might unintentionally reward bad behaviour. PMT instructs caregivers in fostering positive interactions and managing children's behaviour effectively.

[13] Post-treatment and follow-up assessment, which was done on average 10.8 months after the end of therapy. Scott et al (2014) report long term effectiveness.

[14] Riise et al (2021) report that 86% of participants complete treatment. However, the majority of studies were ITT design, meaning that the retention rate has already been incorporated. To be conservative, we assume 95%.

[15] Fonagy (2024) personal communication.

[16] NHS (2017) reports the absolute difference in WEMWBS score between young people with a mental health disorder and young people without a mental health disorder (53-43.1). We use the conversion factor between WEMWBS and Life Satisfaction (0.13, from Parkes, 2024) and apply a 60% reduction, as per Layard et al (2007). This also aligns with Clark et al (2018) adult life satisfaction associated with improved mental health

[17] Knapp et al (2016)

[18] As above

problems. The data cover criminal behaviour between ages 10 and 28 and we assume these costs are spread evenly over the years. This gives an average additional cost from conduct disorder and conduct problems of **£1,900** (in 2023 prices) per year, when cost savings are apportioned according to the relative rates of CD and ODD.

- **Additional costs of residential and foster care:** of **£358** per year, using Scott et al (2001) and the same approach as above.[19]
- As for anxiety, only 50% of the annual cost savings are included for year 1.

Table 3. Summary of additional healthy years and WELLBYs per person treated for CD and ODD

Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Age	8	9	10	11	12	13	14	15	16	17
Additional healthy years	0.33	0.29	0.17	0.13	0.10	0.08	0.06	0.05	0.04	0.03
Additional WELLBYs (discounted)	0.23	0.20	0.18	0.16	0.14	0.13	0.11	0.10	0.09	0.08

Table 4. Summary of cost savings per person treated for CD and ODD

Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Age	8	9	10	11	12	13	14	15	16	17
Service cost savings[20]	£370	£654	£386	£296	£227	£174	£134	£103	£79	£61
NEET cost savings									£23	£17
Crime cost savings	£314	£555	£327	£251	£193	£148	£114	£87	£67	£51
Residential / foster care cost savings	£59	£104	£62	£47	£36	£28	£21	£16	£13	£10
Total Cost savings (discounted)	**£744**	**£1270**	**£723**	**£536**	**£398**	**£295**	**£219**	**£162**	**£137**	**£102**

Total (present value) cost savings of £4,585 over 10 years per young person treated for CD or ODD.

[19] Costs of truancy and exclusion include additional costs to social services and educational services. These are included in the above estimates from Knapp et al (2016) and Scott et al (2001) and would not be additional, therefore are not included in the estimates.

[20] As above, education and health

Depression

Assumptions used to estimate additional healthy years

- Assumed "average" age at treatment: **16**
- Remission from depressive disorder post treatment: 58% in the treatment group and 36% in the control groups **(22% attributed to treatment)** (Cuijpers et al (2023)). Clinical Outcomes of MHSTs have demonstrated a similar recovery rate[21]
- Remission rate[22] between 6-12 months: 44% for the therapy conditions, and 33% for the control conditions **(11% attributed to treatment)** (Cuijpers et al (2023))[23]
- 13-24months: impact on remission reduces from **0.11 to 0** over the course of this year[24]

Since these were RCTs and compared to controls, these figures incorporate the natural (annual) recovery rate and relapse rate.

- Impact of recovery on wellbeing: **0.7** WELLBYs[25]

Cost savings per additional healthy year

- **Mental health-related costs** (to the NHS and social and educational services) of £1,700 a year for children and adolescents with emotional disorders.
- **Additional costs of being Not in Employment Education or Training (NEET).** 11% additional likelihood of being NEET if have a mental health condition in baseline (Knapp et al, 2016) x average cost per 18-24 year old NEET of £5,815[26] Assume that this applies from age **16**.
- As above, we assume cost savings commence from half-way through year 1.
- There are further additional costs which were considered but excluded from these estimates, to avoid double counting.

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[21] Recovery rate of 49% for depression. Parker et al, (2024)

[22] Response rate in this study is defined as a 50% reduction in depressive symptomatology between baseline and post-test). There are no figures for remission from depressive disorder in months 6-12 and so this is taken as a proxy for remission for months 6-12. Since response rate as defined was *lower* than remission rate post treatment, using this as a proxy is considered a conservative assumption.

[23] The overall response rate in psychotherapies at 2 (±1) months after baseline was **39%** (95% CI: 34–45) and **24%** (95% CI: 0.19–28) in control conditions (NNT: 6.2). The difference between therapy and control was still significant at 6–12 months after baseline (NNT=7.8). **=0.15.** Twelve studies that reported outcomes at 2 (±1) months follow-up also reported outcomes at 6–12 months and they reported a response rate of **0.44** (95% CI: 0.37–0.51) for the therapy conditions, and **0.33** (95% CI: 0.24–0.43) for the control conditions.

[24] At 13–24 months follow-up, the response rates in therapy and control groups were very comparable, the RR was almost 1 and was not significant,

[25] As for anxiety

[26] 2023 figures, uprated from Research: Cost Benefit Analysis - Greater Manchester Combined Authority (greatermanchester-ca.gov.uk)

Table 5. Additional healthy years of life and WELLBYs per person treated for depression

Year	1	2
Age	16	17
Additional healthy years of life	0.17	0.06
Additional WELLBYs (discounted)	0.12	0.04

Table 6. Cost savings per person treated for depression

Year	1	2
Age	16	17
Mental health related service cost savings	£140	£ 94
NEET cost savings	£53106	£ 35
Total cost savings (discounted)	**£193**	**£ 124**

Over the 2 years of impact, the present value of the total cost savings is £317 per person treated for depression.

The Costs of Therapy

We include only the costs of running therapy sessions.

We use the NICE guidance as the framework for the number of sessions, the format and the resulting total number of hours for a therapist, per student. We assume a band 7 therapist, 60% of time providing sessions and include cost uplifts, as well as annuitized training costs. The result is £122 per hour of therapy. This will likely be at the upper end of costs, given that the staff mix of MHSTs include a higher proportion of those at band 5 and 6. In addition, many interventions are approximately 6-8 sessions, which is a lower number than assumed (set out below).[27]

[27] Yet have had clinical outcomes reported above Parker (2024)

Anxiety: 8-12 sessions of 45mins individual or 1.5 hours in a group (assumed 50% in each). Assuming 3 pupils in a group session gives a range of £490-£1,100 per pupil[28]. We use the central value which is ~£750.

Calculation:

1.5 hours x 8 sessions / 3 pupils per group = 4 hours of therapist time per pupil x £122

0.75 hours x 12 sessions / 1 pupil (individual sessions) = 9 hours of therapist time per pupil x £122

Depression: group CBT for 2-3 months for mild depression, and individual CBT for 3 months for moderate depression gives a range of £650 to £1,500 per pupil. We use the central value which is ~£1000.

Calculation:

2 hours x 8 sessions / 3 pupils per group = 5.3 hours of therapist time per pupil x £122 (Mild depression)

1 hour x 12 sessions / 1 pupil (individual sessions) = 12 hours of therapist time per pupil x £122 (Moderate depression)

Behaviour disorders: The cost of running one 12-week parenting course to a group of eight families including non-recurrent (training) and recurrent (room rental, crèche facilities) costs was estimated in (Charles et al, 2011) as £1934, which is £3,241 inflated to 2023. Split between 7 families represents a cost of just over £400 per pupil.

Average across conditions: Latest statistics show that 20% of children and young people age 8 to 16 have a probable mental health disorder.[29] The latest data available shows that anxiety is the most common mental health disorder for children and young people, followed by behavioural disorders and depressive disorders.[30] We assume that this split between mental health conditions has remained the same and that, of those who are treated for mental health disorders, 50% are suffering with anxiety, 15% with depression and 35% with conduct disorders or oppositional defiant disorder. Using this split gives an average treatment cost of £676 per child and the average cost savings below.

[28] Range reflecting 8 group sessions up to 12 individual sessions

[29] NHS (2022). Mental Health of Children and Young People in England 2023 - wave 4 follow up to the 2017 survey: Data tables - NHS England Digital

[30] Mental Health of Children and Young People in England, 2017, Summary of Key Findings Mental Health of Children and Young People in England, 2017 [PAS] - NHS England Digital Overall for children aged 5 to 19, Anxiety 7.2%; Behavioural disorder 4.6%; Depressive disorder 2.1%

Table 7. Average estimated benefits and cost savings per person treated by the new service

Year	1	2	3	4	5	6	7	8	9	10
Average WELLBYs (discounted)	0.20	0.16	0.13	0.13	0.09	0.08	0.07	0.06	0.05	0.04
Average cost savings (discounted)	£412	£656	£404	£382	£266	£203	£154	£118	£96	£73
Average cumulative cost savings	£412	£1,068	£1,472	£1,825	£2,091	£2,294	£2,448	£2,566	£2,662	£2,735

Costs are recouped after two years, if using the per pupil costs estimated above.

The wellbeing benefit cost ratio is not directly relevant in this instance, since this policy saves money to the Exchequer. Even when excluding the cost savings and only incorporating the wellbeing benefits compared to the costs, this proposal represents very high value for money, with a benefit cost ratio of 22.

This is a programme with important wellbeing benefits which saves money to the Exchequer.

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